Poly-ICLC and Vaccinia – Russian Studies

Study of the antiviral activity of a poly I : poly-C complex with poly-L-lysine in monkeys]

Burgasova MP.
Antibiotiki. 1977 May;22(5):458-60. [Article in Russian]

Antiviral activity of poly-I-poly-C complex with poly-L-lysine was studied on macaco rhesus. The complex bifilamentous polyribonucleotide induced active production of serum interferon and provided pronounced protection of the monkeys infected intracutaneously with the variolovaccine virus (10 LD50 for the monkeys in intracutaneous infection). The effectiveness of the protective effect depended on the scheme and route of the drug administration. The highest prophylactic and therapeutic effect was provided by local administration of the complex in a dose of I mg per I kg of the body weight, the incubation period being increased 2--3 times and the period of the skin affections being decreased approximately 2 times. The results of the studies on the effect of poly-I-poly-C complex with poly-L-lysine were evident of definite prophylactic activity of the drug against experimental vernal encephalitis in the monkeys. The animals not treated with the inductor died on the 16th or 17th day after infection because of the paralysis of the trunc and extremities muscles. The clinical evidences of the disease in the animals treated with the drug were not uniform: from complete health to death.

[Influence of a complex of poly(I). poly(C) and poly-l-lysine on the course of vaccinia in monkeys]

Andzhaparidze OG, Bektemirov TA, Burgasova MP.
Vopr Virusol. 1977 May;(3):339-43. [Article in Russian]

Experiments of 22 Macaca rhesus monkeys were carried out to study the interferon-inducing and antiviral activity of poly(I) - poly(C) and of its complex with poly-l-lysine. The complexed double-stranded polyribonucleotide induced active production of serum interferon and markedly protected the monkeys inoculated intradermally with vaccinia virus (10 monkey ID50 by intradermal inoculation). The effectiveness of the protective effect depended on the schedule and routes of administration of the preparation. The greatest prophylactic and therapeutic effect was achieved by local administration of the complex in a dose of 1 mg/1 kg of body weight. This also prolonged the incubation period by 2-3 times and reduced the duration of persistence of skin lesions approximately by half. By the intravenous route, the best protection was achieved by 2 injections of 2 mg/kg at an interval of 96 hours. Four daily injections of the complex exerted virtually no effect on the course of vaccinia infection. The animals receiving the complexed poly(I) - poly(C) developed virus-neutralizing antibody to the same titres as control animals and were resistant to reinfection with vaccinia virus. A second injection of the complexed poly(I)-poly(C) 96 hours after the primary inoculation induced the same interferon production as the initial administration of the preparation. The monkeys inoculated intravenously with 2 mg/kg poly(I) - poly(C) showed no interferon in their blood serum and were also poorly protected against vaccinia

[Smallpox vaccination with protection by interferon and an interferon inducer]

Bektemirov TA, Burgasova MP, Kuznetsov VP, Rozina EE, Andzhaparidze OG.
Vopr Virusol. 1980 Jan;(1):76-8. [Article in Russian]

The vaccinal process was studied in monkeys vaccinated with smallpox vaccine under the protection of fibroblastic or leukocytic interferons and modified poly(I) . poly(C). Simultaneous vaccination and administration of one of the studied preparations induced intense immunity and at the same time prevented viremia and alleviated local inflammatory reactions caused by the vaccination. The protective effect of the fibroblastic interferon was more marked than that of the leukocytic one in the vaccinal process. When the monkeys received the preparations intramuscularly the leukocytic but not the fibroblastic interferon was detected in the blood.